

SEQUENCE LISTING

SEQ ID NO: 1

MVLLYSQASWDKRSKADALVLPFWMKNSKAQEAAVVDDEDYKLVYQNALSNFSGKKG
 ETAFLFGNDHTKEQKIVLLGLGKSEEVSGTTVLEAYAQAATTVLRKAKCKTVNILLPTISQ
 LRFSVEEFLTNLAAGVLSLNYNYPTYHKVDTSLPFLEKVTVMGIVSKVGDKIFRKEESLF
 EGVYLTRDLVNTNADEVTPPEKLA AVAKDLAGEFASLDVKILDRKAILKEKMGLLA AVA
 KGAAVEPRFIVLDYQGKPKSKDRTVLIGKGVTFDSGGDLKPGKAMITMKEDMAGAAT
 VLGIFSALASLELPINVTGIIPATENAIGSAA YKMGDVYVGMTGLSVEIGSTDAEGRLLA
 DAISYALKYCNPTRIIDFATLTGAMVVSLGESVAGFFANNDVLARDLAEASSETGEALW
 RMPLVEKYDQALHSDIADMKNIGSNRAGSITAALFLQRFLDNPAWAHLDIAGTAYHE
 KEELPYPKYATGFGVRCLHYMEKFLSK

SEQ ID NO: 2

MTASGGAGGLGSTQTV DVARAQAAAATQDAQEVIGSQEASEASMLKGCEDLINPAAAT
 RIKKKGEKFESLEARRKPTADKAEEKSESTEKGDTPLEDRTEDLSEVSGEDFRGLKNS
 FDDDSSPDEILDALTSKFSPTIKDLALDYLIQTAPSDGKLKSTLIQAKHQLMSQNPQAIV
~~GGRNVLLASETEASRANTSPSSLRSLYEQVTSSPSNCANLHQMLASYLEPSEKTAVMEELV~~
 NGMVADLKSEGPSIPPAKLQVYMTLSNLQALHSVNSFFDRNIGNLENSLKHEGHAPIPS
 LTTGNLTKTFLQLVEDKFPSSSKAQKALNELVGPDTPGPQTEVLNLFALNGCSPRIFSGA
 EKKQQLASVITNTLDADNADNEDYPKPGDFPRSSFSSTPPHAPVPQSEIPTSTSTQPPSP

SEQ ID NO: 3

MCIKRKKTWIAFLAVVCSFCLTGCLKEGGDSNSEKFIVGTNATYPPFEFVDKRGEVVGF
 IDLAREISNKLGKTL DVREFSFDALILNLKQHRIDAVTTGMSITPSRLKEILMIPYYGEEIKH
 LVLVFKGENKHPLPLTQYRSVAVQTGTQYQEA YLQSLSEVHIRSFDSTLEVLMEVMHGKS
 PVAVLEPSIAQVVLKDFPALSTATIDLPEDQWVLGYGIGVASDRPALALKIEAAVQEIRKE
 GVLAELEQKWGLNN

SEQ ID NO: 4

MSEKRKSNKIIGIDLGTNSCVSVMEGGQPKVIASSEGTRTTPSIVAFKGGETLVGIPAKR
 QAVTNPEKTLASTKRFIGRKFESEVESEIKTVPYKVAPNSKGDVFDVEQKLYTPPEIGAQI
 LMKMKETA EAYLGETVTEAVITVPA YFNDSQRASTKDAGRIAGLDVKRIIPEPTAAALA
 YGIDKEGDKKIAVFDLGGGTFDISILEIGDGVFEVLSTNGDTHLGGDDFDGVIINWMLDEF
 KKQEGIDLSKDNMALQRLKDAAEKAKIELSGVSSTEINQPFITIDANGPKHLALTTLTRAQF
 EHLASSLIERTKQPCAQALKDAKLSASDIDDVLLVGGMSRMPAVQAVVKEIFGKEPNKG
 VNPDEVVAIGAAIQGGVVGGEVKDVLLLDVIPLSLGIETLGGVMTPLVERNTTIPTQKKQI
 FSTAADNQPAVTIVVLQGERPMAKDNKEIGRFDLTDIPPAPRGHPQIEVTFDIDANGILHV
 SAKDAASGREQKIRIEASSGLKEDEIQQMIRDAELHKEEDKQRKEASDVKNEADGMIFRA
 EKAVKDYHDKIPAELVKEIEEHIEKVRQAikedASTTAIKAASDELSTHMQKIGeamQAQ
 SASAAASSAANAQGGPNINSEDLKKHSFSTRPPAGGSASSTDNIEDADVEIVDKPE

SEQ ID NO: 5

MHDALQSILAIQELDIKMIRLMRVKKEHQNELAKIQALKTDIRRKVEEKEQEMEKLKDQI
 KGGEKRIQEISDQINKLENQQA AVKKMDEFNALTQEMTAANKERRTLEHQLSDLMDKQ
 AGSEDLISLKESSLSTENSSSAIEEEIRENIRKINEEGRSLLSQRTOQLKETTDPELFSIYERL
 LNNKKDRVVVPIENRVCSGCHIALTPQHENLVRKQDHLVFCEHCSRILYWQELQSPSAE
 GATTKRRRRRTAV

SEQ ID NO: 6

MKKFLLLSLMSLSSLPTFAANSTGTIGIVNLRRCLEESALGKKESA EF EK MKNQFSNSMG
 KMEEELSSY SKLQDDDDYMEGLSETAAAELRKKFEDLSAEYNTAQGGYYQILNQSNLKR
 MQKIMEEVKKASETVRIQEGLSVLLNEDIVLSIDSSADKTD AVIKVLDDSFQNN

SEQ ID NO: 7

MTTESLETLVEQLSGLTVLELSQLKKLLEEKWDVTAAAPVVAVAGAAAAGDAPASAEP
 TEFAVILEDVPSDKKIGVLKVREVVTGLALKEAKEMTEGLPKTVKEKTSKSDAEDTVKK
 LQEAGAKAVAKGL

SEQ ID NO: 8

MKKTALLAALCSVVSLSGCCRVDCCFEDPCAPIQCSPCESKKKDV DGGCNSCNGYVPA
 CKPCGGDTHQDAKHGPQARGIPVDGKCRQ

SEQ ID NO: 9

MPKIDTCDSCVSNTELLAIRTRVTQSYNEAQ TILSSIPDGIFLLSES GEILICNPQARAILGIP
 EDIQLVTRMFHDFFPDTFFGFSVQEALEKEVPPKTIRLTLSQELSQKEVEVFVRKNISHDFL
 FLLIRDRSDYRQLEQAIEKYRSISELGKIAATLAHEIRNPLTSISGFATLLKEELSSERHORM
LNVIEGTRSLNSLVSSMLEYTKIOPLNLRSIDLODFESSLIPELSLTFPSCTFRRTILSPIORSI
 DPDRRLRCVIWNLVKNAVEASDEEIFLELHEKGFSVINTGTLPNIEKLFIPFFTTK PQGNG
 LGLAEAHKIMRLHGGDLVVSTQDNRTTFTILWTPA

SEQ ID NO: 10

MKVILRALCLFLVLPCGCYARVPSFEPFRGAIAPNRYTPKHSPELYFEMGDKYFQAKKFK
 QALLCFGMITHHFPEHALHPKAQFLVGLCYLEMGHPDLADKALTQYQELADTEYSEQLF
 AIKYSIAQSFANGKRKNIVPLEGFPKLLKADTDALRIFEEFVTASSDADLKASALYAKGAL
 LFDRKEYSEAIKTLKKVSLQFP SHSLSPESFTLIAKIHCLQALQEPYNEQYLQDARMNAAA
 LRKQHPNHPNTEVENYIHHMCEAYASCLYSTGRFYEKKRKASSAKIYY SIALENFPDTS
 YVAKCNKRRLERLSKQMS

SEQ ID NO: 11

MFDVVISDIEAREILDSRGYPTLCVKVITNTGTGFEACVPSGASTGIKEALELRDKDPKRY
 QGKGV LQAISNVEKVLMPALQGFSVFDQITADAIMIDADGTPNKEKLGANAILGVSLAL
 AKAAANTLQRPLYRYLGGSFSHVLP CPMMNLINGGMHATNGLQFQEFMIRPISAPSLTE
 AVRMGAEVFNALKKILQNRQLATGVGDEGGFAPNLASNAEALDLLLTAIETAGFTPRED
 ISLALDCAASSFYNTQDKTYDGKSYADQVGILAE LCEHYPIDSIDGLAEEDFEGWKLLS
 ETLGDRVQLVGDDLFVTNSALIAEGIAQGLANAVLIKPNQIGTLTETAEAIRLATIQGYAT
 ILSHRSGETEDTTIADLA VAFNTGQIKTGSLSRSERIAKYNRLMAIEBEMGPEALFQDSNPF
 SKA

SEQ ID NO: 12

MMKRLLCVLLSTSVFSSPMLGYSASKKDSKADICLAVSSGDQEV SQEDLLKEVSRGFSR
 VAAKATPGVVYIENFPKTGNQAIASPGNKRGFQENPFDYFNDEFFNRFFGLPSHREQQRP
 QQRDAVRGTGFIVSEDGYVVTNHHVVEDAGKIHVTLHDGQKYTAKIVGLDPKTDLAVI
 KIQAEKLPFLTFGNSDQLQIGDWAIAIGNPFGLQATVTVGVISAKGRNQLHIVDFEDFIQT
 DAAINPGNSGGPLLNINGQVIGVNTAIVSGSGGYIGIGFAIPSLMAKRVIDQLISDGQVTRG
 FLGVTLQPIDSELATCYKLEK VYGALVTDVVKGSPA EKAGLRQEDVIVAYNGKEVESLS
 ALRNAISLMMPGTRVVLKIVREGKTIEIPVTVTQIPTEDGV SALQKMGVRVQNTPEICKK
 LGLAADTRGILVVAVEAGSPAASAGVAPGQLILAVNRQRVASVEELNQVLKNSKGENVL
 LMVSQGDVVRFTVLKSDE

SEQ ID NO: 13

MKKINKIVLAVGGTGGHIIPALAAARETFIHEDIEVLLLKGGLAHFLGDDSEVAYCDIPSGS
 PFSLRVNRMFSGAKQLYKGYVAALQKIRDFTPDLAIGFGSYHSLPAMLASIRSRIFLHE
 QNTVPGKVNKLFSRFAKGVGMSFAAAGEHFHCRAEEVFLPIRKLSEQIVFPGASPVICVV
 GGSQGAKILNDVVPKALARIRESYSNLYVHHIVGPKGDLQAVSQVYQDAGINHTVTAFD
 HNMLGVLQASDLVISRSGATMLNELLWVQVPAILIPYPGAYGHQEVNAKFFTHTVGGGT
 MILQKYLTEESLSKQVLLALDPATSENRRKAMLSAQQKKSFKSLYQFICESL

SEQ ID NO: 14

MGNSGFYLYNTQNCVFADNIKVGQMTEPLKDQQIILGTTSTPVA AKMTASDGISLTVSN
 NPSTNASITIGLDAEKAYQLILEKLGDQILGGIADTIVDSTVQDILDKITTDPSLGLLKAFN
 NFPITNKIQCNGLFTPRNIETLLGGTEIGKFTVTPKSSGSMFLVSADIIASRMIEGGVVLALV
 REGDSKPYAISYGYSSGVPNLCSLRTRIINTGLTPTTYSRLVGGLESGVVVWVNALSNGNDI
 LGITNTSNVSFLEVIPQTNA

SEQ ID NO: 15 (pmpA)(CT412)

MNRVIEIHAHYDQRQLSQSPNTNFLVHHPYLTLIPKFLLGALIVYAPYSPAEMELAISGHK
 QGKDRDTFTMISSCPEGTNYIINRKLILSDFSLLNKVSSGGAFRNLAGKISFLGKNSSASIH
~~EKHININGEGAGVFESESSIEFTDLRKLVAFGSESTGGIETAKEDISEKNNHHIAERNNTITKGN~~
 GGVIQLQGDMKGSVSFVDQRGAIIFTNNQAVTSSSMKHSGRGGAGISGDFAGSRILFLNNQ
 QITFEGNSAVHGGAIYNKNGLVEFLGNAGPLAFKENTTIANGGAIYTSNFKANQQTSPILF
 SQNHANKKGGAIYAQYVNLEQNQDITRFEKNTAKEGGGAITSSQCSITAHNTIIFSDNAA
 GDLGGGAILLEGKKPSLTIAHSGNIAFSGNTMLHITKKASLDRHNSILIKEAPYKIQLA
 NKNHSHIFFDPVMALSASSSPIQINAPEYETPFFSPKGMIVFSGANLLDDAREDVANRTSIF
 NOPVHLYNGTLSIENG AHLIVQSFKQTGGRISLSPGSSLALYTMNSFFHGNISSEKPLEING
 LSPGVDISPSNLQAEIRAGNAPLRLSGSPSIHDPEGLFYENRDTAASPYQMEILLTSDKIVDI
 SKFTTDSLVTNKQSGFQGAWHFSWQPNTINNTKQKILRASWLPTGEYVLESNRVGRAVP
 NSLWSTFLLLQTASHNLGDHLCNNRSLIPTSYFGVLIGGTGAEMSTHSSEESFISRLGAT
 GTSIIRLTPSLTSLSGGGSHMFGDSFVADLPEHITSEGIQVQNVGLTHVWGPLTVNSTLCAAL
 DHNAMVRICSKKDHTY GKWDTFGMRGTLGASYTFLEYDQTMRVFSFANIEATNILQRA
 FTETGYNPRSFSKTKLLNIAIPIGIGYEFCLGNSSFALLGKGSGISYSRDIKREN PSTLAHLAM
 NDFAWTTNGCSVPTSAHTLANQLILRYKACSLYTAYTINREGKNLSNSLSGCGGYVGF

SEQ ID NO: 16 (pmpB)(CT413)

MKWLSATAVFAAVLPSVSGFCFPEPKELNFSRVGTSSSTTFTETVGEAGAEYTVSGNASF
 TKFTNIPTTDTTPTNSNSSSSNGETASVSESDSTTTTPDPKGGGAFYNAHSGVLSFMTR
 SGTEGSLTLSEIKITGEGGAIFSQGELLFTDLTGLTIQNNLSQLSGGAIFGESTISLSGITKAT
 FSSNSAEVPAPVKKPTPEPKAQTASETSGSSSSSGNDSVSSPSSSRAEPAAANLQSHFICATA
 TPAAQTD TETSTPSHKPGSGGAIYAKGDLTIADSQEVLF SINKATKDGGAIFAEKDV SFEN
 ITSLKVQTN GAEKGGAIYAKGDL SIQSSKQSLFNSNY SKQGGGALYVEGDINFQDLEEIR
 IKYNKAGTFETKKITLPKAQASAGNADAWASSSPQSGSGATTVSNSGDSSSGSDSDTSET
 VPATAKGGGLYTDKNLSITNTGHEIANNKATDVGGGAYVKGTLTCENSHRLQFLKNSS
 DKQGGGIYGEDNITLSNLTGKTLFQENTAKEEGGGLFIKGTDKALMTGLDSFCLINNTS
 EKHGGGAFVTKEISQTYTSDVETIPGITPVHGETVITGNKSTGGNGGGVCTKRLALSNLQ
 SISISGNSAAENGGAHTCPDSFPTADTAEQPAASAAATSTPESAPVVSTALSTPSSSTVSS
 LTLAASSQASPATSNKETQDPNADTDLLIDYVVDTTISKNTAKKGGGIYAKKAKMSRID
 QLNISENSATEIGGGICCKESLELDALVSLSVTENLVGKEGGGLHAKTVNISNLKSGFSFS
 NNKANSSSTGVATTASAPAAAAASLQAAAAAVPSSPATPTYSGVVGGAIYGEKVTFSSQC
 SGTCQFSGNQ AIDNNPSQSSLNVQGGAIYAKTSLSIGSSDAGTSYIFSGNSVSTGKSQTTG
 QIAGGAIYSPTVTLNCPATFSNNTASMATPKTSSSEDGSSGNSIKDTIGGAIAGTAITLSGVS
 RFSGNTADLGAAIGTLANANTPSATSGSQNSITEKITLENGSFIFERNQANKRGAIYSPSVS
 IKGNNTIFNQNTSTHDGSAIYFTKDATIESLGSVLFTGNNVTATQASSATSGQNTNTANY

GAAIFGDPGTTQSSQTDAILTLLASSGNITFSNNSLQNNQGDTPASKFCSIAGYVKLSLQA
 AKGKTISFFDCVHTSTKKIGSTQNVYETLDINKEENSNPYTGTIVFSSELHENKSYIPQNAI
 LHNGTLVLKEKTELHVVSFEQKEGSKLMKPGAVLSNQNIANGALVINGLTIDLSSMGTP
 QAGEIFSPPELRIVATTSSASGGSGVSSSIPTNPKRISAAAPSGSAATTPTMSENKVFLTGD
 TLIDPNGNFYQNPMLGSDLDVPLIKLPTNTSDVQVYDLTSLGDLFPQKGYMGTWTLDSN
 PQTGKLQARWTFDITYRRWVYIPRDNHFIANSILGSQNSMIVVKQGLINNMLNNARFDDI
 AYNFWVSGVGTFLAQQTPLSEEFSSYSRGTSVAIDAKPRQDFILGAAPSKMVGKTKA
 IKKMHNYFHKGSEYSYQASVYGGKFLYFLLNKQHGWLALPFLIQGVVSYGHIKHDITTL
 PSHERNKGDWEDLGWLADLRISMDLKEPSKDSSKRITVYGELEYSSIRQKQFTEIDYDPR
 HFDDCA YRNLSLPVGCAVEGAIMNCNILMYNKLALAYMPSTYRNNPVCKYRVLSSNEA
 GQVICGVPTRTSARAESTQLYLGPFWTLYGNYTIDVGMYTLSQMTSCGARMIF

SEQ ID NO: 17 (pmpC)(CT414)

MKFMSATAVFAAALSSVTEASSIQDQIKNTDCNVSKLGYSTSQAFTDMMLADNTEYRA
 ADSVSFYDFSTSSRLPRKHLSSSSEASPTTEGVSSSSSGETDEKTEEELDNGGIYAREKLT
 SESQDSLNSQSIELHDNSIFFGEGEVIFDHRVALKNNGGAIYGEKEVVFENIKSLLVEVNIAV
 EKGGSVYAKERVSLENVTEATFSSNGGEQGGGGIYSEQDMLISDCNNVHFQGNAAAGAT
AVKQCLDEEMIVLLAECVDSLSEDTLSDSTPETEQTESNGNODGSSETEDTQVSESESTPS
 PDDVLGKGGGIYTEKSLTITGTTGTIDFVSNIAATDSGAGVFTKENLSCTNTNSLQFLKNSA
 GQHGGGAYVTQTMSTNTTSESITTPPLIGEVIFFSENTAKGHGGGICTNKLSSLNLKTVTL
 TKNSAKESGGAIFTDLASIPITDTPESSTPSSSPASTPEVVASAKINRFFASTAKPAAPSLTE
 AESDQTDQTETSDTNSDIDVSIENILNVAINQNTSAKKGGAIYGKKAKLSRNNLELSGNS
 SQDVGGGLCLTESVEFDAIGSLLSHYNSAAKEGGAIHSKTVTLNLKSTFTFADNTVKAI
 VESTPEAPEEIPPVEGEESTATEDPNSNTEGSSANTNLEGSQGDADTGTGDVNNESQDTS
 DTGNAESEEQLQDSTQSNEENTLPNSNIDQSNENTDESSDSHTEETDESVSSESSESSTP
 QDGGAAASSGAPSGDQSSISANACLAKSYAASTDSSPVSNSSGSEEPVTSSSDSDVTASSDNP
 DSSSSGDSAGDSEEPTEPEAGSTTETLTLLIGGGAIYGETVKIENFSGQGIFSGNKAIDNTTE
 GSSSKSDVLGGAVYAKTLFNLDGSSRRVTFTSGNTVSSQSTTGQVAGGAIYSPTVTIATP
 VVFSKNSATNNANNTTDTQRKDTFGGAIGATSASVLSGGAHFLENVADLGSAIGLVPGT
 QNTETVKLESGSYFEKNKALKRATYAPVVSIAKYATATFNQNRSLIEGSAIYFTKEASIE
 SLGSVLFTGNLVTLLSTTTEGTPATTSGDVTKYGAAIFGQIASSNGSQTDNLPLKLIASG
 GNICFRNNEYRPTSSDTGTSTFCSIAGDVKLTMQAAKGKTISFFDAIRTSTKKTGTQATAY
 DTLINKSEDSSETVNSAFTGTILFSELHENKSYIPQNVVLHSGSLVLKPNTLHVISFEQK
 EGSSLVMTPGSVLSNQTVADGALVINNMTIDLSSVEKNGLAEGNIFTPELRIIDTTTGGSG
 GTPSTDSESNQNSDDTEEQNNNDASNQGESANGSSSPAVAAAHTSRTRNFAAAATATPT
 TTPTATTTTNSQVILGGEIKLIDPNGTFFQNPALRSDQQISLLVLPTDSSKMQAQKIVLTGD
 IAPQKGYTGTLTLDPDQLQNGTISVLWKFDYSYRQWAYVPRDNHFIANSILGSQMLMVT
 VKQGLLNDKMNLARFEEVSYNNLWISGLGTMLSQVGTPTSEEFYYSRGASVALDAKP
 AHDVIVGAAPSKMIGKTKSLKRENNYTHKGSEYSYQASVYGGKPFHFVINKKTEKSLPL
 LLQGVISYGYIKHDTVTHYPTIRERNKGEWEDLGWLTALRVSSVLRTPAQGDTKRITVY
 GELEYSSIRQKQFTEIDYDPRYFDNCTYRNLAIPMGLAFEGELSGNDILMYNRFSVAYML
 SIYRNSPTCKYQVLSSGEGGEIICGVPTRNSARGEYSTQLYLGPLWTLYGSYTIEADAHTL
 AHMMNCGARMTF

SEQ ID NO: 18 (pmpD)(CT812)

MSSEKDIKSTCSKFSLSVVAAILASVSGLASCVDLHAGGQSVNELVYVGPQAVLLLDQIR
 DLFVGSKDSQAEGQYRLIVGDPSSFQEKDADTLPGKVEQSTLFSVTNPVVFQGVDDQDQ
 VSSQGLICSFTSSNLDSPRDGESFLGIAFVGDSKAGITLTDVKASLSGAALYSTEDLIFEKI
 KGGLEFASCSSLEQGGACAAQSILHDCQGLQVKHCTTAVNAEGSSANDHLGFGGGGAFF
 VTGSLSGEKSLYMPAGDMVVANCDGAISFEGNSANFANGGAIAASGKVLVANDKKTS
 FIENRALSGGAIAASSDIAFQNCALVFKGNCAIGTEDKGSLLGGGAISLGTVLLQGNHGI

TC DK NESASQGG AIFGKNCQISDNEGPVVFRDSTACLG GGAIAAQEIVSIQNNQAGISFEG
 GKASFGGGIACGSFSSAGGASVLGTIDISKNLGAISFSRTLCTTSDLGQMEYQGGGALFGE
 NISLSENAGVLTFKDNIVKTFASNGKILGGGAILATGKVEITNNSEGISFTGNARAPQALPT
 QEEFPLFSKKEGRPLSSGYSGGGAILGREVAIHNAAVVFEQNRLQCSEEEATLLGCCGG
 GAVHGM DSTSIVGNSSVRFGNNYAMGQGVSGGALLSKTVQLAGNGSVDFSRNIASLGG
 GALQASEGNCELVDNGYVLF RDNRGRVYGG AISCLR GDVVISGNKGRVEFKDNIATRLY
 VEETVEKVEEVEPAPEQKDNNEL SFLGRAEQSFIT AANQALFASBDGDLSPESSISSEELA
 KRRECAGGAIFA KRVRIVDNQEA VVFSNNFSDIYGG AIFTGSLREEDKLDGQIPEVLISGN
 AGDVVFSGNSSKRDEHLPH TGGGAICTQNL TISQNTGNVLFYNNVACSGGAVRIEDHGN
 VLLEAFGGDIVFKGNSSFRAQGS DAIFYAGKESHIT ALNATEGHAIVFHDALVFENLEER
 KSAEVL LINSRENPGYTGSIRFLEAESKVPQCIHVQQGSLELLNGATLCSYGFKQDAGAK
 LVLAAGAKLKILDSGTPVQQGH AISKPEAEIESSEPEGAHSLWIAKNAQTTPMVDIHTI
 SVDLASFSSSQEGTVEAPQVIVPGGSYVRSGELNLELVNTTGTGYENHALLKNEAKVPL
 MSFVASGDEASAEISNLSVSDLQIHVVTPEIEEDTYGHMGDWSEAKIQDGTLVISWNPTG
 YRLDPQKAGALVFNALWEEGAVLSALKNARFAHNLT AQRM EFDYSTNVWGFAGGFR
 TLSAENLVAIDGYKGAYGGASAGVDIQLMEDFVLGVSGAAFLGKMDSQKFDAEVS RKG
 VVGSVYTGFLAGSWFFKGQYSLGETQNDMKTRYGVLGESSASWTSRGVLADALVEYRS
 LVGPV RPTFYALHFN PYVEVSYASMKEPGETEQGREARSFEDASLTNETIPLGMKEELAEI
 KGQFSEVNSLGISYAW EAYRKVEGGAVQLLEAGFDWEGAPMDLPRQELRVALENTE
 WSSYFSTVLGLTAFCCGGFTSTDSKLG YEANTGLRLIF

SEQ ID NO: 19 (pmpE)(CT869)

MKKAFFFFLIGNSLSGLAREVPSRIFLMPNSVPDPTKESLSNKISLTGDTHNLTNCYLDNL
 RYILAILQKTPNEGA AVTITD YLSFFDTQKEGIYFAKNLTPESGGAIGYASPNSPTVEIRDIT
 GPVIFENNTCCRLFTWRNPYAADKIREGGAIHAQNL YINHNHDVVGFMKNFSYVQGGAI
 STANTFVVSENQSCFLFMDNICIQNTAGKGGAIYAGTSNSFESNNCDLFFINNACCAGG
 AIFSPICSLTGNRGNIVFYNNRCFKNVETASSEASDGGAIKVTTRLDVTGNRGRIFFSDNIT
 KNYGGAIYAPVVTLVDNGPTYFINNIANNKGGAIYIDGTSNSKISADRHAIIFNENIVTNV
 TNANGTSTSANPPRRNAITVASSSGEILLGAGSSQNLIFYDPIEVSNAGVSVSFNKEADQT
 GSVVFSGATVNSADFHQRNLQTKTPAPLTL SNGFLCIEDHAQLTVNRFTQTGGVVSLGN
 GAVLSCYKNGTGDSASNASITLKHIGLNLSSILKSGAEIPLLWVEPTNNSNNYTADTAATF
 SLSDVKLSLIDDYGNSPYESTDLTHALSSQPMLSISEASDNQLQSENIDFSGLNVPHYGWQ
 GLWTWGWAKTQDPEPASSATITDPQKANRFHRTL LLLTWLPAGYVPSPKHRSP LIANTLW
 GNMLLATESLKNSAELTPSGHPFWGITGGGLGMMVYQDPRENHPGFHMRSSGYSAGMI
 AGQTHTFSLKFSQTYTKLNERYAKNNVSSKNYSCQGEMLFSLQEGFLLTKLVGLYSYGD
 HNCHHFYTQGENLTSQGTFRSQTMGGA VFFDLPMKPFGSTHILTAPFLGALGIYSSL SHF
 TEVGAYPRSFSTKTPLINVLVPIGVKGSFMNATHRPQAWTVELAYQPVL YRQEPGLAAQL
 LASKGIWFGSGSPSSRHAMSYKISQQTQPLSWLTLHFQYHGFYSSSTFCNYLNGEIALRF

SEQ ID NO: 20 (pmpF)(CT870)

MIKRTSLSFACLSFFYLSTISILQANETDTLQFRRFTFSDREIQFVLDPASLITAQNIVLSNLQ
 SNGTGACTISGNTQTQIFSNSVNTTADSGGAFDMVTTSFTASDNANLLFCNNYCTHNKG
 GGAIRSGGPIRFLNNQDVL FYNNISAGAKYVGTGDHNEKNRGGALYATTITLTGNRTLAF
 INNMSGDCGGAISADTQISITDTVKGILFENNHTLNHIPYTQAENMARGGAICSRRLCSIS
 NNSGPIVFNYNQGGKGGAISATRCVIDNNKERIIFSNSSSLGWSQSSSASNGGAIQTQGF
 TLRNNKGSIFYDSNTATHAGGAINCGYIDIRDNGPVYFLNNSAAWGA AFNL SKPRSATN
 YIHTGTGDIVFNNNVVFTLDGNLLGKRKLFHINNNEITPYTSLGAKKDTRIIFYDLFQW
 ERVKENTSNPPSPTSRNTITVNPETEFSGAVVFSYNQMSSDIRTLMGKEHNYKEAPTTL
 KFGTLAIEDDAELEIFNIPFTQNPTSLALGSGATLTVGKHGKLNITNLGVILPILKEGKSP
 PCIRVNPQDMTQNTGTGQTPTSSTSSISTPMIIFNGRLSVDENYESVYDSMDLSRGKAEQLI
 LSIETTNDGQLDSNWQSSLNTSLLSPPHYGYQGLWTPNWITTTTITLNNNSSAPT SATSI

AEQKKTSETFTPSNTTTASIPNIKASAGSGSGSASNSGEVTITKHTLVVNWAPVGYIVDPIR
 RGDLIANS LVHSGRNM TMGLRSLLPDNSWFALQGAATT LFTKQKRLSYHGYSSASKG
 YTVSSQASGAHGHKFLLSFSQSSDKMKEKETNNRLSSRY YLSALCFEHPMFDRIALIGAA
 ACNYGTHNMRSFYGTKKSSKGKFHSTTLGASLRCEL RDSMPLRSIMLTPFAQALFSRTEP
 ASIRESGDLARLFTLEQAHTAVVSPIGIKGAYSSDTWPTLSWEMELAYQPTLYWKRPLL N
 TLLIQNNGSWVTTNTPLAKHSFYGRGSHSLKFSLKLFANYQAEVATSTVSHYINAGGA
 LVF

SEQ ID NO: 21 (pmpG)(CT871)

MQTSFHKFFLSMILAYSCCSLSGGGYAAEIMIPQGIYDGETLTVSFPYTVIGDPSGTTVFSA
 GELTLKNDNSIAALPLSCFGNLLGSFTVLGRGHS LTFENIRTSTNGAALSDSANSGLFTIE
 GFKELSFNCNSLLAVLPAATTNNGSQTPTTTSTPSNGT TYSKTDLLLLNNEKFSFYSNLV
 SGDGG AIDAKSLTVQGISKLCVFQENTA QADGGACQVVT SFSAMANEAPIAFIANVAGV
 RGGGIAAVQDGQQGVSSSTSTEDPVVSFSRNTAVEFDGNVARVGGGIYSYGNVAFLNNG
 KTLFLNNVASPVYIAAEQPTNGQASNTSDNYGDGGAIFCKNGAQAAGSNNSGVSFSGE
 GVVFFSSNVAAGKGGAIYAKKLSVANCGPVQFLGNIANDGGAIYLGESGELSLSADYGD
 IIFDGNLKR TAKENAADVNGVTVSSQAISMGS GGKITT LRAKAGHQILFNDPIEMANGNN
 QPAQSSEPLKINDGEGYTGDIVEANGNSTLYQNYTIEQGRIVLREKAKLSVNSLSQTGGSL
 YMEAGSTLDFVTPQPPQPPAANQLITLSNLHLSLSSLLANNAV TNPTNPPAQDSHPAI
 GSTTAGSVTISGPIFFEDLDDTAYDRYDWLGSNQKIDVLKLQLGTQPSANAPSDLTLGNE
 MPKYGYQG SWKLAWDPNTANNGPYTLKATWTKTGYNPGPERVASLVPNSLWGSILDIR
 SAHSAIQASVDGRSYCRGLWVSGVSNFFYHDRDALGQGYR YISGGYSLGANSYFGSSMF
 GLAFTEVFGRSKDYVVCRSNHHCIGSVYLSTKQALCGSYLFGDAFIRASYGFGNQHMK
 TSYTFAEESDVRWDNNCLVGEIGVGLPIVITPSKLYL NELRPFVQAEFSYADHESFTEEGD
 QARAFRSGHLMNLSVPVGVKFDRCSSTHPNKYSFMGAYICDAYRTISGTQTTLSSHQET
 WTTDAFH LARHG VIVRGS MYASLTSNIEVYGHGRY EYRDTSRGYGLSAGSKVRF

SEQ ID NO: 22 (pmpH)(CT872)

MPFSLRSTSFCLACLCSYSGFASSPQVLTPNVTT PFKGDDVYLN GDCAFVNVYAGAE
 NGSII SANGDNLTITGQNHTLSFTDSQGPVLQNYAFISAGETLTLKDFSSLMFSKNVSCGE
 KGMISGKT V SISGAGEVIFWDNSVGYSPLSIVPASTPTPPAPAPAPAASSSLSP TVSDARKG
 SIFSVETSLEISGVKKGV MFDNNAGNFGTVFRGNSNNNAGSGGSGSATTPTSFTVKNCCKGK
 VSFTDNVASC GGGVYKGTVLFKDNEGGIFFRGNTAYDDLGLAATSRDQNTETGGGG
 GVICSPDDSVKFEGNKGSIVFDYNFAKGRGGSILTKEFSLVADDSVVFSNNTAEKGGGAI
 YAPTIDISTNGGSILFERNRAAEGGAICVSEASSGSTGNLTLSASDGDIVFSGNMTSDRPGE
 RSAARILSDGTTVSLNASGLSKLIFYDPVVQNN SAAGASTPSPSSSSMPGAVTINQSGNGS
 VIFTAESLTPSEKLQVLNSTSNFPGALTVSGGELVTEGATLTTGTITATSGRVTLGSGAS
 LSAVAGAANNYTCTVSKLGIDLESFLTPNYKTAILGADGT VTVNSGSTLDLVMESAE
 VYDNPLFVGSLTIPFVTLSSSSASNGVTKNSVTINDADAAHYGYQGSWSADWTKPPLAP
 DAKGMVPPNTNNTLYLTWRPASNYGEYRLDPQRKGELVPNSLWVAGSALRTFTNGLKE
 HYVSRDVGFVASLHALGDYILNYTQDDRDGFLARYGGFQATAASHYENGSI FGVAFGQ
 LYGQTKSRMYYSKDAGNMTMLSCFGRSYVDIKGTETVMYWETAYGYSVHRMHTQYF
 NDKTQKFDHSKCHWHNNNYAFVGA EHNFL EYCIPT RQFARDYELTGFMRFEMAGGW
 SSSTRETGSLTRYFARGSGHNMSLPIGIVAHAVSHVRRSPPSKLTLMNGYRPDIWRVTPH
 CNMEIANGVKTPIQGSPLARHAFFLEVHDTLYIHHFGRAYMNYSLDARRRQTAHFVSM
 GLNRIF

SEQ ID NO: 23 (pmpI)

MRPDHMFCCCLCAAILSS TAVLFGQDPLGETALLTKNP NHVVCTFFEDCTMESLFPALC
 AHASQDDPLYVLGNSYCW FVSKLHITDPKEALFKEKGDL SIQNFRFLSFTDCSSKESSPSII
 HQKNGQLSLRNNGSMSFCRNHAE GSGGAISADAFSLQHNYLFTAFEENS SKGNGGAIQA

QTFSLSRNVSPISFARNRADLNGGAICCSNLICSGNVNPLFFTGNSATNGGAICCSIDLNTS
 EKGSLSLACNQETLFASNSAKEKGGAIYAKHMLVRYNGPVSFNNNSAKIGGAIAIQSGGS
 LSILAGEGSVLFQNNNSQRTSDQGLVRNAYLEKDAILSSLEARNGDILFFDPIVQESSKES
 PLPSSLQASVTSPTPATASPLVIQTSANRSVIFSSERLSEEEKTPDNLTSQLQOPIELKSGRL
 VLKDRAVLSAPSLSQDPQALLIMEAGTSLKTSSDLKLATLSIPLHSLDTEKSVTHAPNLSI
 QKIFLSNSGDENFYENVVELLSKEQNNIPLLTLSKEQSHLHLPDGNLSSHFGYQGDWTFWSW
 KDSDEGHSLIANWTPKNYVPHPERQSTLVANTLWNTYSDMQAVQSMINTIAHGGAIFYLF
 GTWGS AVSNLFY AHDSSGKPIDNWHHRSLGYLFGISTHSLDDHSFCLAAGQLLGKSSDSF
 ITSTETTSYIATVQAQLATPLMKISAQACYNESHELKTKYRSFSKEGFGSWHSVAVSGEV
 CASIPVSNGLFSSFSIFS KLQGFSGTQDGFEESSGEIRSFSASSFRNISLPMGITFEKKSQ
 KTRNYYYFLGAYIQDLKRDVESGPVLLKNAVSWDAPMANLDSRAYMFRLTNQRALH
 RLQTLNVS YVLRGQSHSYSLDLGTTYRF

SEQ ID NO: 24 (MOMP)(CT681)

MKKLLKSVLVFAALSSASSLQALPVGNPAEPSLMIDGILWEGFGGDPCDPCATWCDAIS
 MRVGYYGDFVFDRLKTDVNKEFQMGAKPTTDTGNSAAPSTLTARENPA YGRHMQDA
 EMFTNAACMALNIWDRFDVFCTLGATSGYLKGNSASFNLVGLFGDNENQKTVKAESVP
 NMSEDOQSVVELYTDTEAWSVGARAALWECGCATLGASEQY AQSKPKVEELNVLCA
 AEFTINKPKGYVGKEFPLDLTAGTDAATGTKDASIDYHEWQASLALS YRLNMFTPYIGV
 KWSRASFDADTIRIAQPKSATAIFDTTTLNPTIAGAGDVKTGAEGQLGDTMQIVSLQLNK
 MKSRKSCGIAVGTTIVDADKYAVTVETRLIDERA AHVNAQFRF

SEQ ID NO: 25 CSFIGGITYL

SEQ ID NO: 26 SFIGGITYL

SEQ ID NO: 27 SIIGGITYL

SEQ ID NO: 28 (Cap1)(CT529)

MASICGRLGSGTGNALKAFFTPQNNKMARVVNKTGMDKTIKVAKSAAELTANILEQA
 GGAGSSAHITASQVSKGLGDARTVVALGNAFNGALPGTVQSAQSFFSHMKAASQKTQE
 GDEGLTADLCVSHKRRAAAA VCSIIGGITYLATFGAIRPILFVNKMLAKPFLSSQTKANM
 GSSVSYMAANHAASVVGAGLAISAERADCEARCARIAREESLLEVPGEENACEKKVAG
 EKAKTFTRIKYALLTMLEKFLECVADVFKLVPLPITMGIRAI VAAGCTFTSAIIGLCTFCAR
 A

SEQ ID NO: 29 (groEL-like hsp60 protein)

MVAKNIKYNEEARKKIQKGVKTLAEAVKVTLGPKGRHVVIDKSFGSPQVTKDGVTVAK
 EVELADKHENMGAQMVKEVASKTADKAGDGTATVLAELAIYTEGLRNVTAGANPMD
 LKRGIDKAVKVVVDQIRKISKPVQHHKEIAQVATISANND AEIGNLIAEAMEKVGKNGSI
 TVBEAKGFETVLDIVEGMNFRNGYLSSYFATNPETQECVLEDALVLIYDKKISGIKDFLPV
 LQQVAESGRPLLI AEDIEGEALATLVVNRIRGGFRVCAVKAPGFGDRRKAMLEDIAITG
 GQLISEELGMKLENANLAMLGKAKKVIVSKEDTTIVEGMGEKEALEARCESIKKQIEDSS
 SDYDKEKLQERLAKLSGGVAVIRVGAATEIEMKEKKDRVDDAQHATIAAVEEGILPGGG
 TALIRCIPTLEAFLPMLTNEDEQIGARIVLKALSAPLKQIAANAGKEGAIIFQQVMSRSANE
 GYDALRDAYTDMLEAGILDPKAVTRSALESAASVAGLLLTTEALIAEIPPEKPAAAPAMP
 GAGMDY

SEQ ID NO: 30 (omp2/omcB)

MRIGDPMNKLIRRAVTIFAVTSVASLFASGVLETSMAESLSTNVISLADTKAKDNTSHKS
 KKARKNHKETPVDRKEVAPVHESKATGPKQDSCFGRMYTVKVNDNRNVEITQAVPEY

ATVGSPYPIETATGKRDCVDVITQQLPCEAEFVRSDPATTPADGKLVWKIDRLGQGEK
 SKITVWVKPLKEGCCFTAATVCACPEIRSVTKCGQPAICVKQEGPENACLRCPVVYKINI
 VNQGTATARNVVVENPVPDGYAHSSGQRVLTFTLGDMQPGEHRTITVEFCPLKRGRAT
 NIATVSYCGGHKNTASVTTVINEPCVQVSIAGADWSYVCKPVEYVISVSNPGLVLRDV
 VVEDTLSPGVTVLEAAGAQISCNKVVWTVKELNPGESLQYKVLVRAQTPGQFTNNVVV
 KSCSDCGTCTSCAEATTYWKGVAAATHMCVVDTCDPVCVGENTVYRICVTNRGSAEDTN
 VSLMLKFSKELQPVSFSGPTKGTITGNTVVFDLRLGSKETVEFSVTLKAVSAGDARGE
 AILSSDTLTPVSDTENTHIY

SEQ ID NO: 31

MFRYTLRSRLFFILALFFCSACDSRSMITHGLSGRDANEIVLLVSKGVAAQKVPQAASST
 GGSGEQLWDISVPAAQITEALAILNQAGLPRMKGTSLDLFAKQGLVPSEMQEKIRYQEG
 LSEQMATTIRKMDGIVDASVQISFSPEEDQRPLTASVYIKHRGVLDNPNSIMVSKIKRLV
 ASAVPGLCPENVSVVSDRASYSIDITINGPWGLSDEMNYVSVWGIILAKHSLTKFRLVYF
 LILLFILSCGLLWVIWKTHTLISALGGTKGFFDPAPYSQLSFTQNKPAKETPGAEGAE
 AQTASEQPSKENAEKQEENNEDA

SEQ ID NO 32 (CT600)

MRKTIFKAFNLLFSLFLSSCSYPCRDWECHGCD SARPRKSSFGFVPFYSDDEIQQAFVED
 FDSKEEQLYKTSAQSTSFRNITFATDSYSIKGEDNLTLASLVRHLHKSPKATLYIEGHTDE
 RGAAAYNLALGARRANAVKQYLIKQGLAADRLFTISYGKEHPVHPGHNELAWQQNRRT
 EFKI HAR

SEQ ID NO 33 (CT541)

MKNILSWMLMFAVALPIVGCDNGGGSQTSATEKSMVEDSALTDNQKLSRTPFGHLLSRQ
 LSRTEDFSLLVEVIKGMQSEIDGQSAPLTDTEYEKQMAEVQKASFEAKCSENLASAEKF
 LKENKEKAGVIELEPNKLQYRVVKEGTGRVLSGKPTALLHYTG SFIDGKVFDSSSEKNKEP
 ILLPLTKVIPGFSQGMQGMKEGEVRVLYIHPDLAYGTAGQLPPNSLLIFEVKLIEANDDNV
 SVTE"

SEQ ID NO 34 (CT623)

MKKYFYKGFVGALLLACGSTNLAFQAASSMDSQLWSVEDLDSYLSSKGFVETRKRDRGV
 LRLAGDVRARWIYAKEDLETTQTPAKPMLPTNRYRSEFNLYVDYTAANSWMTSKMNW
 VTIAGGESSAAGLDINRAFLGYRFYKNPETQAEVFAEIGRSGLDIFDSDVQFNSNFDGIH
 LYAARRISEKLPFTMIVHGGPFVVMMAEKEYAWVVEAILNKLPGNFVVKTSVVDWNTL
 TAKTNDPADASAAQPAKPNTKYDYLWQWLVGKSTAMPWFNGQTKNLYTYGAYLFN
 PLAEIPENWKQSTTPTKITNGKENHAWFIGCSLGGVRRAGDWSATVRYEYVEALAIPEI
 DVAGIGRGNQMKYWFAQAIKQGLDPKESNGFTNYKGVSYQFVMGLTDSVSFRAYAAAY
 SKPANDNLGSDFTYRKYDLGLISSF

SEQ ID NO 35 (CT700)

MWLIVASTLLACLAMALVFKA YRHVISFRSYVNQVIRDVRLSVDLKEWAVAEMRLAPIL
 KKRQYRRKYLFEYIRILRELERFEEAEKLLGEAKKLLAGAHFFLEV AHKAFRHGAYKE
 AAHAFSLLSAELMGEREVARYTISLVYLGEVDAACRIIEPWIGPLAHQEVFISVGHYFAT
 KRYADAIDFYRRARSLGSCPIDVLYNLAHSLRICGQYVDAGMLFRELLGDPVYKDEAMF
 NIGLCEQKLGNSKKALLIYQNSSELWVRGDALMMRYAALAAADQQDYQLAEHCWTLAF
 RCQSYADDWNCCVHYGLALCHLKKYAEAEKVYLRVIQKTPDCLVACKALAWLAGVG
 HATMISAREGIAYAKRALQIKRSPEVLELLSACEAREGNFDVAYDIQAILAERD TTAKER
 ERRS QILKNLRQKLPIDQQHIVEVSLLLA

SEQ ID NO 36 (CT266)

MLVESQLGLEDVLEAFSEFNFDIQSKSFIESFQDKKLRRRTVIQRFLHHPLLHHDIARAAYL
 LAALEEGVDLGYQFLCMHQTQSGAALLFRRAGFLWGGLPYPGEHAEMAMLLSRIAIFY
 DTSYEQVQKMIAFQHALFSHERNIFPALWSQEGSRSNQEKTAVSKLLFCQKEARIEDQFT
 LTDMSLGFWMRRTPSFSAAYVSGSGCKSGVGAFLIGDVGVNLNYGPCVGDPECLGFGLC
 GQVKEFSCQEKDEEVSI SFAGALSQPSSRRTGFSYLQDALFSTNSCYCIDITEQKCHVASS
 LDRENQDAFFAIFCKGSQCQVCNGPKLRTGSPDSYKGPAYDVLKGEKETVRILSSSPHM
 EIFSLQGKDRFWGSNFLINLPYTQNSINILFEKA

SEQ ID NO 37 (CT077)

MGKFFASYLLILAPFFLQSCSAPSRTTLEGVRMTIPYRIVFGEALSPDAFQQAQKEIDRVF
 DHIDQTFNNWNPLSEISRINRTTKQTPILSPALFAFLCEIDHFHAFSDGRFDPTLGALKSL
 WLLHLKSHTIPSQELQHLKYHSSGWHLISLDKTQQTLRKLSPLVQLDLCGTVKGFAVDL
 LGTACAQFCQNYVVEWGGEIKTKGKHPSGRSWAVASSATPEILHLHDHAIATSGSQYQR
 WHVDNKTYTHILDPLTGTPLEDSSHPILAVSVINESCAFADAMATALTTFSSKQEALDWA
 NKKHLCAYTIDKNVS

SEQ ID NO 38 (CT456)

MENSISGYQPTVTTSTSTTSASGASGSLGASSVSTTANATVTQTANATNSAATSSIQTTG
 ETVVNYTNSASAPNVTVSTSSSTQATATSNKTSQAVAGKITSPDTSESSETSSSTSSSDHIP
 SDYDDVGSNSGDISNNYDDVGSNNGDISSNYDDAAADYEPIRTTENIYESIGGSRTSGPEN
 TSGGAAAALNSLRGSSYSNYDDAAADYEPIRTTENIYESIGGSRTSGPENTSGGAAAALN
 SLRGSSYSNYDDAAADYEPIRTTENIYESIGGSRTSGPENTSDGAAAAALNSLRGSSYTTG
 PRNEG VFPGPEGLPDMSLPSYDPTNKTSLLTFLSNPHVKS KMLENSGHFVFIDTDRSSFI
 LVPNGNWDQVCSIKVQNGKTKEDLDIKDLENMCAKFCTGFSKFSGDWDSLVEPMVSAK
 AGVASGGNLPNTVIINNKFCTCVAYGPWNSQEASSGYTPSAWRRGHRVDFGGIFEKAND
 FNKINWGTQAGPSEDDGISFSNETPGAGPAAAPSTPSSIPINNVNVVGGTNVNIGDTNV
 NTTNTTPTTQSTDASTDTS DIDDINTNNQTDDINTTDKDS DGAGGVNGDISETESSSGDDS
 GSVSSSES DKNASVGNDGPAMKDILSAVRKHLDVVYPGENGGSTEGPLPANQTLGDVIS
 DVENKGSAQDTKLSGNTGAGDDDPTTTAAVGNGAEBITLSDTDSGIGDDVSDTASSSGD
 ESGGVSSPSES NKNTAVGNDGPSGLDILAAVRKHLDKVYPGDNGGSTEGPLQANQTLG
 DIVQDMETTGTSETVVS PWKGSTSSTESAGGSGSVQTLSPPTPTSTTLRTGTGATTT
 SLMMGGPIKADIITGGGGGRIPGGGTLEKLLPRIAHLDISFDAQGD LVSTEEPQLGSIVNK
 FRQETGSRGILAFVESAPGKPGSAQVLTGTGGDKGNLFQAAAAVTQALGNVAGKVNLA
 IQGKLSSLVND DGKGSVGRDLFQAAAQTTQVLSALIDTVG

SEQ ID NO 39 (CT165)

MFQPETVPSNRSTETTPQNIEVYNDNRNFTNHTTEDVIRIGERLQRQFYNMTEESRVPFTTS
 PSHHTGNWKTAFLYNLSQVVAHIFPSTVQPIRVKPTRIPSPPTPPEGTTTAETSTSENKVT
 TISKEQEVTTKPLLVRERRSLLHSQ

SEQ ID NO 40 (CT713)

MSSKLVNYLRLTFLSFLGIASSTLDAMPAGNPAPFVIPGINIEQKNACSFDL CNSYDVLSA
 LSGNLKLCFCGDYIFSEEAQVKDVPVVTSTTAGVGPSPDITSTTKTRNFDLVN CNLNTN
 CVAVAFSLPDRSLSAIPLFDVSFEVKVGGLKQYYRLPMNAYRDFTSEPLNSESEVTDGMI
 EVQSNYGFVWDVSLKKVIWKDGVSVFVGADYRHASCPIDYIANSQANPEVFIADSDG
 KLNFKESVVCVGLTTYVNDYVLPYLA FSIGSVSRQAPDDSFKKLEDRFTNLKFKVRKITS
 SHRGNICIGATNYVADNFFYNVEGRWGSQRAVNVSGGFQF

SEQ ID NO 41 (CT082)

MSISGSGNVSPATPDFDPSILMGRQAASAHAAKEASGASKATETSAAEQQALISSGTELD
 YVTDLQQSEGKYKKTLDKTSKSPKTKLKGNFSKVRAGTKGFLTGFSTRASRISARKAEN

NGEGMSMIPSQMEYVKKKGNRVSPMQNFYLGASGLWSPTSDVSSITENCLGATALSTT
 PLLTTMQDPVSIHLSSGEITALASFNPVVRTASLNEQTINAWTEARLGGEMVSTLLDPNI
 ETSSLLRRAPTVSNEGMVDVSDMGNQTTSLSMIEGLVNTVVDDPASABEEKKTGELSLEE
 MAAMAKMMAALLSSGQGMVFIASSTPSSGLTQFPEPKFSGTIPHHFSKKEDNETIWGL
 DSQIGSIAFDTRRENNASPLPTTSLHEEASYPVGEAPLDVNEIPFAVQHSTVFSKETANT
 EQALIQNESLGEIPVSAEVVGQDTVSSAYQFPHLGMAVLASVPLSTEDYKTAVEHRKGP
 GGPPDPLIYQYRNVAVDPAIIFQSPSPFSVSSRFSVQGKPEAVA VYNDDQEEAAGGNRDS
 DEGKDQEQDKTRETEDAGGDS

SEQ ID NO 42 (CT181)

MLSKFCKLSLSAILINTLAPSETFSEEGTSGFLGRMKSWILKDKTILSTTEESQTSALIEKVS
 DLLSWKRYDYTQESGFAIQFPESPEHSEQVIEVPQSDLAIRYDTYVAETPSDSTVYVVSIV
 EYPEKIDISRPELNLQEGFAGMLYALPESQVLYLKATALQGHKALEFWIACDDVYFRGM
 LVSVNHTLYQVFMVYKGRSPEILDKEYSTFIQSFKVTKVRNSKKMDIRKRVSL

SEQ ID NO 43 (CT050)

MNDTKNNISSSFWNPNKVVTKVLLKVSETGIESTPGIVKHNLITQSENPTDPTDAVTFK
YLKENYTKENDPNPGFLPTTGGTMTGDDMOGNNVTDIVMYTNGOQNETDDSAVTIGY
 LNEKADEIKSNDQITTA VAGLSNINSQISTLHQLLGIAEDPDTVTNPDLKTSGGTVYEDI
 DMSSNTVSDLGTPTNKDTKSAINVEFVQAKITSPQMAFLKNNDTNLSNITVSEYFNWLQ
 DPTQAPTPEPDPDPEPAPEPEPDTSDSSGSGSENPA DPAPTNPDSNAQNNPTPSSNGATAS
 IRKLAATTTTVPTDTEIAPAAEDPNLPNTTFSEKSPLWEEFFSFSDDSSRSEMVIQKTGILTFS
 MQGTWENPSSSQTPSTDPISELELTVTPPTDTPPESPPSPPEAPAPEATPSPTNNNLTA SIK
 TFSRKYNLSATPSPTPTPTPEPTTITKTLSSSGQSC TLQIPVQATRSVLKLYVNPNNSS
 GGSSGSGGSSQPETTPTGITLQSFWSLVLTPEITKATSTPSTPSQP

SEQ ID NO 44 (CT157)

MSVQGSSSLKYSDLFKPPEPTSSTDSSKEPPKESAWKVVS HSRGRRRARSNPSPHTSQNT
 SPKDSSLVARTDKAATDIFNSAKHKA IETTKRSDQQSRSLHILHLLAENPEPIVFHSAHQT
 NHNDPQRMLCDAILQANRIITMRIFNIGSPEIRALIRAVRRNIPVVVSAWNFPNLSNWDR
 ESELCVELRGNPQICLHKKTTLIDNQLTI GTANYTKSSFFKDINLTALIQNPALYSLILSDT
 RGSVSGSQTISYYPLPFQSN TKILPIQBIQKAQRTIKIAMNIFSHTEIFLALEQARLRGVTI
 TIVINKKESAHTLDILHRISALLLLKSVTTVDSLHAKICLIDNQLIFGSPNWTYHGMHKN
 LEDLLIVTPLTPKQIHSIQEIWAFLKNSSPV

SEQ ID NO 45 (CT128)

MDRSPLFLIIMGAPGSGKGTQSKLLASQLSLLHISSGDLLRDAVSKDTPLSQEIKSYLDQG
 KLLPDTLVWKL VHEKLDEFQD TLLRRLSFLSRSENSAILDGFRTVTQAKLLHEFLSSYF
 PNYKVILLDISDEEVLNRLTSRYICPACQGIYNEQQGFSSCPKCSVELIRRSDDTLEVILDRI
 QTYKQETQPVLDDYYTEKQKLITIDANAPTQQVFQSI LDSL SASLVYQERDCCNCDDED

SEQ ID NO 46 (CT153)

MTKPSFLYVIQPFVFNPR LGRFSTDSDTYIEEENRLASFIESLPLEIFDIPSFMETAISNSPYI
 LSWETTKDGALFTILEPKLSACAATCLVAPSIQMKSDAELLEEEKQALLRSSHDGVKYRIT
 RESFSPEKKTPKVALVDDDIELIRNVDFLGRAVDIVKLDPINILNTVSEENILDYSFTRETA
 QLSADGRFGIPPGTKLFPKPSFDVEISTSI FEETTSFTRSFSA SVTFSPDLAATMPLQSPPM
 VENGQKEICVIQKHLFPSYSPKLVDIVKRYKREAKILINKLAFGMLWRHRAKSQILTEGS
 VRLDLQGFTESKYN YQIQVGSHTIAAVLIDMDISKIQSKSEQAYAIRKIKSGFQRLDDYH
 IYQIERKQTFSPKHSLSSTSHSESDSLDLSEAAAFSGSLTCE FVKKSTQHAKNTVTCST
 AAHSLYTLKEDDSSNPSEKRLDSCFRNWIENKLSANSPDSWSAFIQKFGTHYLASATFGGI
 GFQVLKLSFEQVEDLHKKISLETA AANSLLKGSVSSSTESGYSSYSSTSSSHTVFLGGTV

LPSVHDERLDFKDWSESVHLEPVPIQVSLQPTNLLVPLHFPNIGAAELSNKRESLQQAIR
 VYLKEHKVDEQGERTTFTSGIDNPSSWFTLEAAHSPLIVSTPYIASWSTLPYLFPTLRERSS
 ATPIVFYFCVDNNEHASQKILNQSYCFLGSLPIRQKIFGSEFASFPYLSFYGNAKEAYFDNT
 YYPTRCGWIVEKLNTTQDQFLRDGDEVRLKHVSSGKYLATTPLKDTHTGTLTRTTNCEDA
 IFIUKKSSGY

SEQ ID NO 47 (CT262)

MKKFLLLSLMSLSSLPTFAANSTGTIGIVNLRRCLEESALGKKESAEEFEKMKNQFSNSMG
 KMEEELSSIYSKLQDDDDYMEGLSETAAAELRKKFEDLSAEYNTAQGGYYQILNQSNLKR
 MQKIMEEVKKASETVRIQEGLSVLLNEDIVLSIDSSADKTDVAVIKVLDDSFQNN

SEQ ID NO 48 (CT276)

MFKRPAKNFFDEVQTLYEDSGANSTSYSIYPQRTERLENHSNIFEPAPKPAETRLLSQEEHS
 QWTDQQEELATQESSFPEEPETTLGEGVSFKGELTFERLLRIDGTFEGILVSKGKIIVGPQG
 YVKANIELEEAVIAGVVEGNITVTGRVSLQGRAMVTGDIQAGSLCVDEGVRLCGYVSIQ
 GAPSNEQEEIDS

SEQ ID NO 49 (CT296)

MRAVLHLEHKRYFQNHGHLFEGLAPVSDCKQLEAELKLFLKEVAVVKDRHLQRWREN
 VHRTLPEVQMIVKRVRLDHLAAELTHRSRVALVRDLWVQKQEEIFFDDCDCSVLLCLSG
 EKAGWGLFFSGEYPQDVFNWGAGDTAILRFSSAGFPN

SEQ ID NO 50 (CT372)

MQAAHHHYHRYTDKLHRQNHKKDLISPKPTEQEACNTSSLSKELIPLSEQRGLLSPICDFI
 SERPCLHGVSVRNKQALKNSAGTQIALDWSILPQWFNPRVSHAPKLSIRDFGYSAHQTV
 TEATPPCWQNCFNPSAAVTIYDSSYGKGVFQISYTLVRYWRENAATAGDAMMLAGSIN
 DYPQRQNIQSQFTFSQNFNERVSLTIGQYSLYADGTLYNNDQQLGFISYALSQNPTATYS
 SGSLGAYLQVAPTASTSLQIGFQDAYNISGSSIKWSNLTKNRYNFHGFASWAPRCCLGSG
 QYSVLLYVTRQVPEQMEQTMGWSVNASQHISSKLYVFGRYSGVTGHVFPINRTYSFGM
 ASANLFNRNPQDLFGIACAFNNVHLSASPNTKRKYETVIEGFATIGCGPYLSFAPDFQLYL
 YPALRPNKQSARVYSVRANLAI

SEQ ID NO 51 (CT412)

MNRVIEIHAHYDQRQLSQSPNTNFLVHHPYLTLPKFLLGALIVYAPYSFAEMELAISGHK
 QGKDRDTFTMISSCPEGTNYIINRKLILSDFSLLNKVSSGGAFRNLAGKISFLGKNSSASIH
 FKHININGFGAGVFSESSIEFTDLRKLVAFGSESTGGIFTAKEDISFKNNHHIAFRNNITKGN
 GGVIQLQGDMKGSVSFVDQRGAIIFTNNQAVTSSSMKHSRGGGAISGDFAGSRILFLNNQ
 QITFEGNSAVHGGAIYNKNGLVEFLGNAGPLAFKENTTIANGGAIYTSNFKANQQTSPILF
 SQNHANKKGGAIYAQYVNLEQNQDTIRFEKNTAKEGGGATSSQCSITAHNTIIFSDNAA
 GDLGGGAILLEGKKPSLTLIAHSGNIAFSGNTMLHITKKASLDRHNSILIKEAPYKIQLAA
 NKNHSIHFFDPVMALSASSSPIQINAPEYETPFFSPKGMIVFSGANLLDDAREDVANRTSIF
 NQPVHLYNGTLSIENGAHLIVQSFKQTGGRISLSPGSSLALYTMNSFFHGNISSKEPLEING
 LSFGVDISPSNLQAEIRAGNAPLRLSGSPSIHDPEGLFYENRDTAASPYQMEILLTSDKIVDI
 SKFTTDSLVTNKQSGFQGAWHFSWQPNTINNTKQKILRASWLPTGEYVLESNRVGRAVP
 NSLWSTFLLLQTASHNLGDHLCNNRSLPTS YFGVLIGGTGAEMSTHSSEESFISRLGAT
 GTSIIRLTPSLTLSGGGSHMFGDSFVADLPEHITSEGIVQNVGLTHVWGPLTVNSTLCAAL
 DHNAMVRICKKDHITYGKWDTFGMRGTLGASYTFLEYDQTMRVFSFANIEATNILQRA
 FTETGYNPRSFSKTKLLNIAPIGIGYEFCLGNSSFALLGKGSGIGYSRDIKRENPSLAHLAM
 NDFAWTTNGCSVPTSAHTLANQLILRYKACSLYITAYTINREGKNLSNSLSCGGYVGF

SEQ ID NO 52 (CT480)

MIDKIIRTILVLSLFLLYWSSDLLEKDVKSIKRELKALHEDVLELVRISHQQKNWVQSTDF
SVSPEISVLKDCGDPAPFNLLCEDPYVEKVVPSSLKEGFVPKGILRTAQVGRPDNLSPFNG
FVNIVRFYELCVPNLA VEHVGKYEEFAPSLALKIEEHYVEDGSGDKEFHLYLRPNMFWEP
IDPTLFPKNITLADSFLRPHPVTAHDVKFYDVMNPYVAEMRAVAMRSYFEDMVSVR
VENDLKLIVRWRAHTVRNEQGEEEEKVLYSAFANTLALQPLPCFVYQHFANGEKIVPED
SDPD TYRKDSVWAQNFSSHWAYNYIVSCGAFRFAGMDDEKITLVRNPNYHNPFAALVE
KRYTYMKDSTDLSLFDKAGKVDIAYFPPNHVDNLASFMTSAYKEQAARGEAILKNS
SDRSYSYIGWNCLSLFFNNRSVRQAMNMLIDRDRIEQCLDGRGVSVSGPFSLCSPSYNR
DVEGWQYSPEEAARKLEEEGWIDADGDGIREKVIDGVVVPFRFRLCYVKSVTARTIAE
YVATVCKEVGIECCLGLDMADYSQALEEKNFDAILSGWCLGTPPEDPRALWHSEGALE
KGSANAVGFCNEEADRIEQLSYEYDSNKRQALYHRFHEVIHEESPYAFLYSRQYSLVYK
EFVKNIFVPTEHQDLIPGAQDET VNLSMLWVDKEEGRCSAIS

SEQ ID NO 53 (CT548)

MLKMFVWLNLSLVFFSLLLSACGYTVLSPHYVEKKFSLSEGIYVCPIEGDSLGLDVSSLSYEL
EKRGHLHTRSQGTSSGYVLKVSLFNETDENIGFAYTPQKPDEKPVKHFTVSNEGRLLSAK
VQLKNRTQEILVEKCLRKSVTFDFQPD LGTANAHQLALGQFEMHNEA KSA SRILYSQL
AETVQQVYYDLF

SEQ ID NO 54 (CT043)

MSRQNAEENLKNFAKELKLPDVAFDQNNTCILFVDGEFSLHLYEEHSDRLYVYAPLLD
GLPDNPQRRALAYEKLLEGSM LGGQMAGGGVGVATKEQLILMHCVLDMKYAETNLLK
AFAQLFIETVVKWRTVCSDISAGREPTVDTMPQMPQGGGGGIQPPAGIRA

SEQ ID NO 55 (CT635)

MKNNSAQKIIDS IKQILSIYKIDFEP SFGATLTDDNDLDYQMLIEKTQE KIQELDKRSQEIL
QQTGMTREQMEVFANNPDNFSPEEWRALENIRSSCNEYKKETEELIKEVTNDIGHSSHKS
PTPKKTKSSSQKSKKKKNWIPL

SEQ ID NO 56 (CT859)

MRKIILCSPRGFCAGVIRAIQTVEVALEKWGRPIYVKHEIVHNRHVVDKLREKGAIFIEDL
QEVPRNSRVIFSAHGVPSPVREEAEERGLIADATCGLVTKVHSAVKMYAKKGYHILIGK
RKHVEIIGIRGEAPDQITVVENIAEVEALPFS AQDPLFYVTQTTL SMDDAADIVAALKARY
PRIFTLPSSSICYATQNRQGALRNILPQVDFVYVIGDTQSSNSNRLREVAERRGV TARLVN
HPDEVTEEILQYSGNIGITAGASTPEDVVQACLMKLQELIPDL SIEMDLFVEEDTVFQLPK
EL

SEQ ID NO 57 (CT671)

MELNKTSESLFSAKIDHNHPRTEAHEPRDQREVRVFSLEGRSSTRQEKADRMPGRTSSRQ
ESSKGSEEGAVHESTAGVSSKEEEESKGDGFFTGGNPTSGMALVETPM AVVSEAMVETS
TMTVSQVDLQWVEQLVTSTVESLLVADIDGKQLVEIVLDNSNTVPAAF CGANLTLVQTG
EEISVSFSNFVDQAQLTEATQLVQQNPKQLVSLVESL KARQLNLTEL VVG NVAVSLPTIE
KIETPLHMIAATIRHHDQEGDQEGEGRQDQHQQHQEQKKVEEAHI

SEQ ID NO 58 (CT016)

MKVKINDQFICISPYISARWNQIAFIESCDGGTEGGITLKLHLIDGETVSIPNLGQAIVDEVF
QEHLLEYLESTAPQKNKEEEKISSLLGAVQQMAKGCEVQVFSQKGLVSM LLGGAGSINVL
LQHSPEHKDHPDLPTDLLERIAQMMRSLSIGPTSILAKPEPHCNCLHCQIGRATVEEEDAG
VSDIDLTFRSWDISQS GEKMYTVTDPLNPEEQFNVYLGTPIGCTCGQPYCEHVKA VLYT

SEQ ID NO 59 (CT017)

MLIFALSFGADACLCAADLSKAKVEASVGDRAAFSPFTGEIKGNRVRLRLAPHTDSFIIKE
LSKGDCLAVLGESKDYYVVAAPGVRGYVFRTFVLNDNVIEGEKVNVRLEPSTSAPILARL
SKGTVVKT LGAAQGWIEIALPKQCVFYVAKNFVKNVGALDLYNQKEGQKKLALDLLS
SAMDFADELQKKIEDIDLDAIYKKMNLAQSEEFKDVPGQLQSLVQKALERVQEAFLAKS
LEKSSVKVPEIRHKVLEBIAVVS PAVEETPVVTKTEEQKVTTVPVPAPAVVTEPAQDLSSV
KGSLLSHYIRKKGFVKASPVIEGRESFERSLFAVWLSLQPEEIRHQLTMESFYRDEQKKKR
VLTGELEVYPHIVKNNPGDYLLKNGEDVVA FVYATSIDLSKWL GKSVVLECVSRPNNHF
AFPAYIVLSVKEGA

SEQ ID NO 60 (CT043)

MSRQNAEENLKNFAKELKLPDVAFDQNNTCILFVDGEFSLHLYEEHSDRLYVYAPLLD
GLPDNPQRRLALYEKLLLEGSM LGGQMAGGGVGVATKEQLILMHCVLDMKYAETNLLK
AFAQLFIETVVKWRTVCSDISAGREPTVDTMPQMPQGGGGGIQPPPAGIRA

SEQ ID NO 61 (CT548)

MLKMFWLNSLVFFSLLLSACGYTVLSPHYVEKKFSLSEGIYVCPIEGDSLGD LVSSLSYEL
EKRG LHTRSQGTSSGYVLKVSLFNETDENIGFAYTPQKPDEKPVKHFIVSNEGR LALS AK
VQLIKNRTQEILVEKCLRKSVTFDEQPD LGTANAHQLALGO FEMHNEAIKSASRILYSQL
AETIVQQVYYDLF